

REMARKS

Claims 1, 4-15, 17-18 and 20-47 are pending in the application. Reconsideration and allowance of claims 1, 4-15, 17-18 and 20-47 are respectfully requested.

Prior Art Rejections under 35 U.S.C. §§ 102(b), 103(a)

Claims 1, 4-7, 12-15, 17, 18, 30-34, 38-41 and 44-46 stand rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. patent number 6,538,621 to Sievenpiper, et al. ("Sievenpiper '621). Claims 8-11, 20-29, 35-37, 42-43 and 47 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Sievenpiper '621 in view of U.S. patent number 6,426,722 to Sievenpiper, et al. ("Sievenpiper '722").

This rejection is respectfully traversed. Applicants have previously shown a date of invention prior to that of Sievenpiper '621, removing the teachings of this reference from the prior art. On February 28, 2003, applicants submitted a Declaration under 37 C.F.R. § 1.131 ("the Declaration") by the inventors of the present application as evidence that the claimed subject matter was invented prior to the effective date of the reference applied at that time, PCT publication number WO 01/73893. The Declaration made clear that the invention defined by then-pending claims of the application was conceived at least prior to March 29, 2000, the priority date of the PCT publication. Moreover, the Declaration further made clear that the invention defined by the then-pending claims was diligently developed during a period beginning before March 29, 2000 and was successfully reduced to practice before September 30, 2000. While claim 1 was amended slightly subsequent to filing of the Declaration, it is submitted that this amendment is not material to the prior art status of either PCT publication number WO 01/73893 or Sievenpiper '621.

The currently-applied Sievenpiper '621 reference discloses the same subject matter disclosed in the previously-applied PCT publication WO 01/73893. A copy of the front page of PCT publication WO 01/73893 and a copy of the front page of Sievenpiper '621 are attached hereto as Exhibit 1 and Exhibit 2, respectively, for the convenience of the Examiner. Each of these documents has the same priority, that of U.S. patent application serial number 09/537,923

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filed March 29, 2000. It is submitted that these documents contain substantially the same teaching.

Accordingly, it is respectfully submitted that the Declaration filed February 28, 2003 to remove PCT publication WO 01/73893 as prior art also removes Sievenpiper '621 as prior art. Sievenpiper '621 therefore can not anticipate the invention defined by claims 1, 4-7, 12-15, 17, 18, 30-34, 38-41 and 44-46. It is respectfully submitted that the 35 U.S.C. § 102(e) rejection of these claims may not be maintained.

Moreover, it is respectfully submitted that Sievenpiper '722 fails to disclose all the limitations of the invention defined by claims 8-11, 20-29, 35-37, 42-43 and 47. This reference is relied on in the Final Office Action merely to show a frequency selective surface with first and second layers of conducting patches, a limitation admitted to be missing from Sievenpiper '621. Accordingly, without Sievenpiper '621, the 35 U.S.C. § 103(a) rejection of claims 8-11, 20-29, 35-37, 42-43 and 47 may not be maintained. Withdrawal of the prior art rejections of the pending claims is respectfully requested.

With this response, the application is believed to be in condition for allowance. Should the examiner deem a telephone conference to be of assistance in advancing the application to allowance, the examiner is invited to call the undersigned attorney at the telephone number below.

Respectfully submitted,



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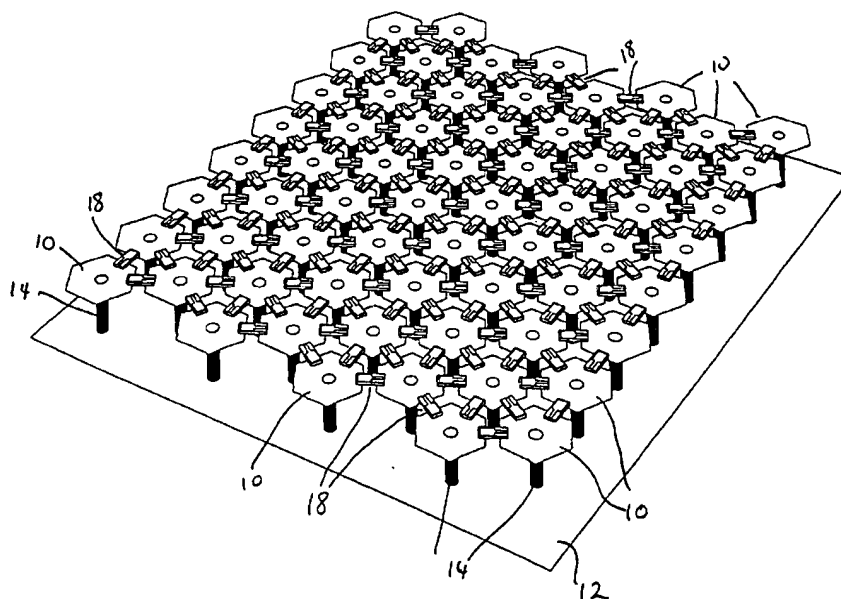
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[Continued on next page]

(54) Title: A TUNABLE IMPEDANCE SURFACE



(57) Abstract: A tuneable impedance surface for steering and/or focusing a radio frequency beam. The tuneablesurface comprises a ground plane; a first plurality of elements disposed in an array a first distance from the ground plane, the distance being less than a wavelength of the radio frequencybeam; and a second plurality of elements disposed in an array for controlling the capacitance between the elements of the first array. The second plurality of elements include, in one embodiment, variable discrete capacitors and, in another embodiment, a plurality of platesarranged to be moveable relative to the first plurality of elements.

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